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United States Patent [19][11] **Patent Number:** **5,527,929****Timmers et al.**[45] **Date of Patent:** **Jun. 18, 1996**[54] **ZWITTERIONIC BISCYCLOPENTADIENYL COMPLEXES**[75] **Inventors:** **Francis J. Timmers; David D. Devore,**
both of Midland, Mich.[73] **Assignee:** **The Dow Chemical Company,**
Midland, Mich.[21] **Appl. No.:** **482,135**[22] **Filed:** **Jun. 7, 1995****Related U.S. Application Data**[60] Division of Ser. No. 481,791, Jun. 7, 1995, which is a
continuation-in-part of Ser. No. 284,925, Aug. 2, 1994,
abandoned.[51] **Int. Cl.⁶** **C07F 17/00; C07F 7/00;**
B01J 31/00[52] **U.S. Cl.** **556/7; 556/11; 556/2;**
556/28; 556/53; 502/152; 502/158; 526/134;
526/160; 526/162; 526/348; 526/943[58] **Field of Search** **556/7, 11, 12,**
556/28, 53[56] **References Cited****U.S. PATENT DOCUMENTS**

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(DeVore et al.).**Primary Examiner**—Porfirio Nazario-Gonzales[57] **ABSTRACT**Zwitterionic biscyclopentadienyl, Group 4 transition metal
complexes formed with conjugated dienes useful as catalysts
for polymerizing olefins, diolefins and/or acetylenically
unsaturated monomers.**3 Claims, No Drawings**

with Louis C. Giegang's Review